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PATENT & TRADEMARK OFFICE
IAP99

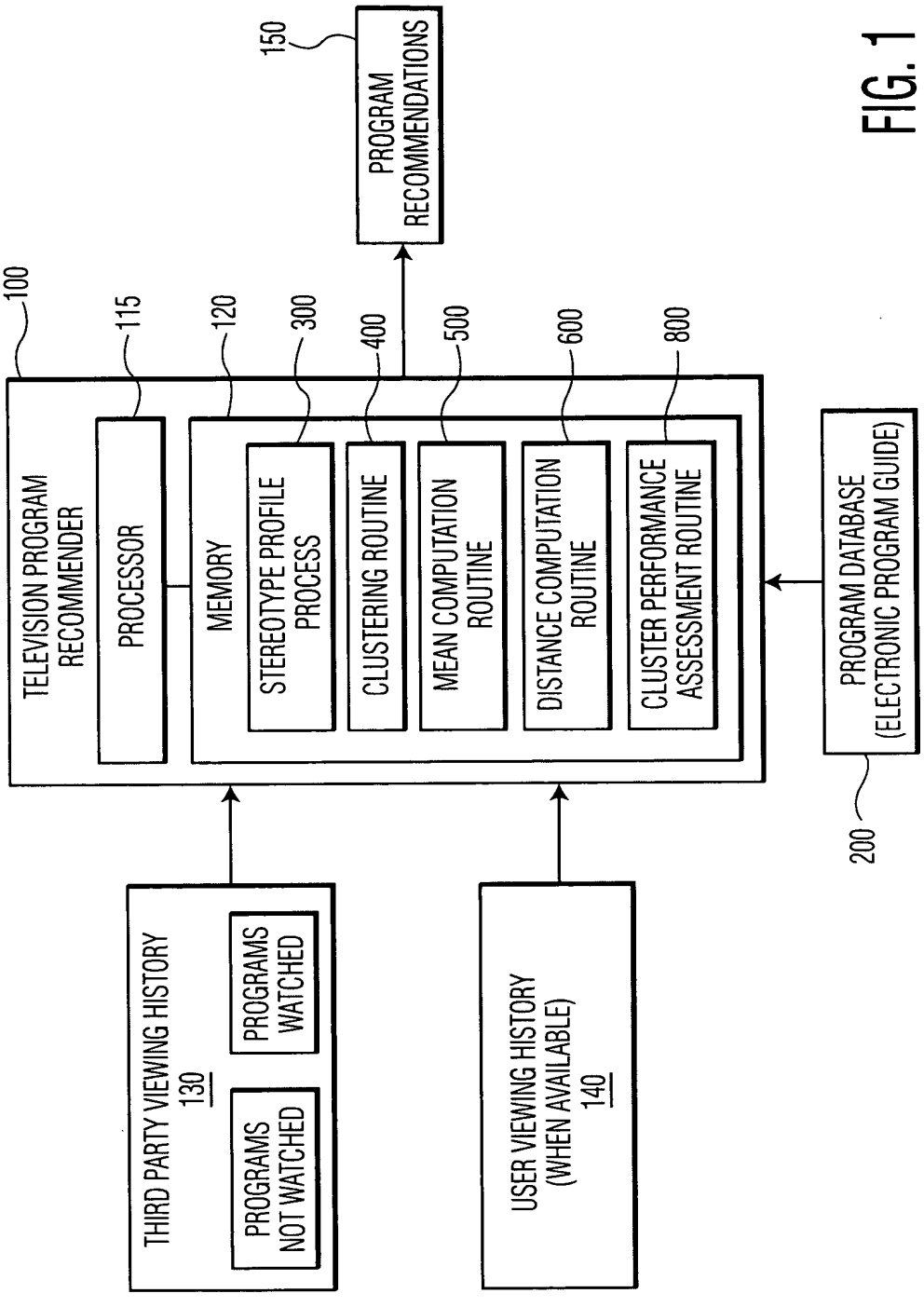

FIG. 1

PROGRAM DATABASE - 200

	DATE/TIME 240	CHANNEL 245	TITLE 250	GENRE 255	•••	ACTOR 270
205	11/18/99 -- 8:00 P.M.	CH1	LUCY	COMEDY		CLINT DENIRO
210	11/18/99 -- 8:30 P.M.	CH1	AL'S FAMILY	SITCOM		JENNIFER COX
	•••					
220	11/18/99 -- 9:00 P.M.	CH3	YOUR HOUSE	DRAMA		LUCY VANCE

FIG. 2

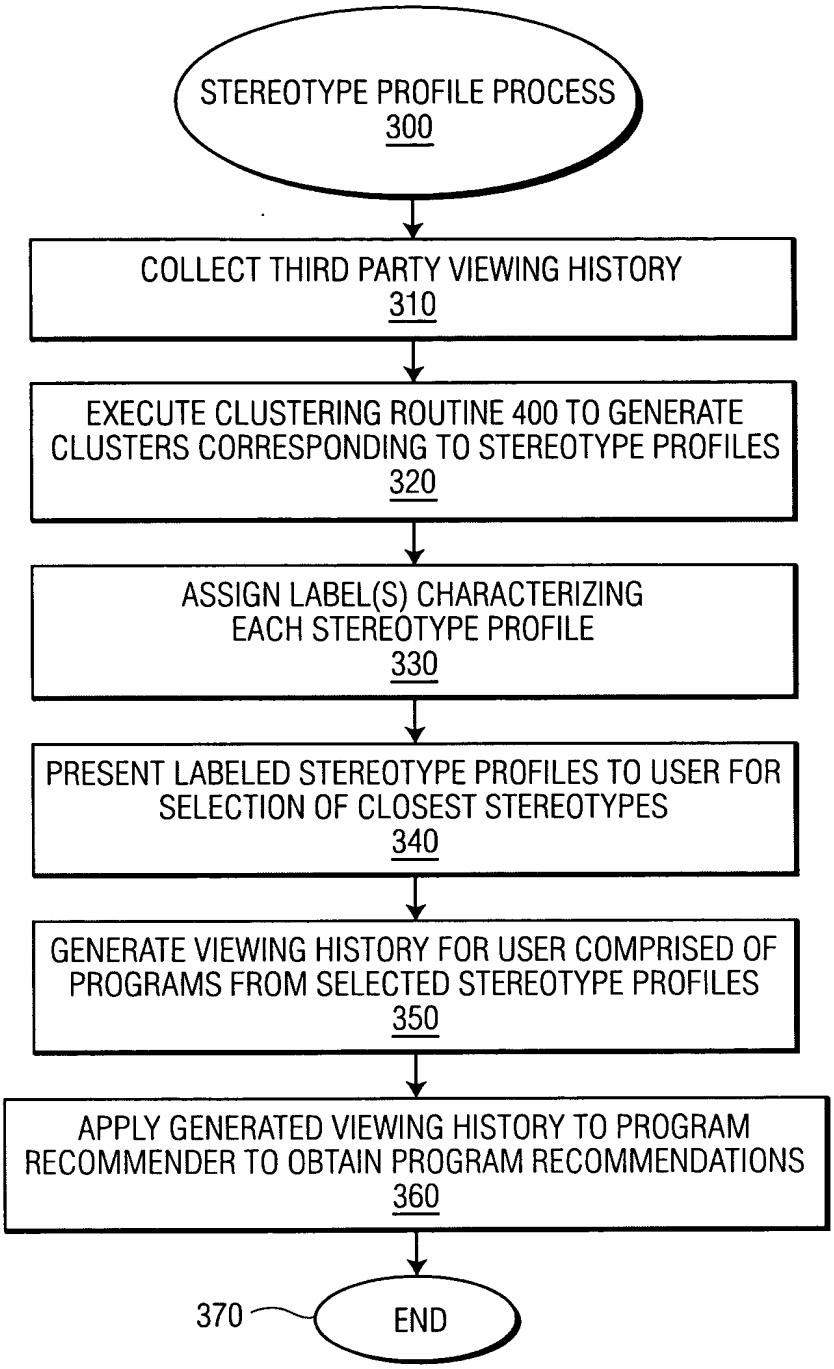
STEREOTYPE PROFILE PROCESS
300
COLLECT THIRD PARTY VIEWING HISTORY
310
EXECUTE CLUSTERING ROUTINE 400 TO GENERATE CLUSTERS CORRESPONDING TO STEREOTYPE PROFILES
320
ASSIGN LABEL(S) CHARACTERIZING EACH STEREOTYPE PROFILE
330
PRESENT LABELED STEREOTYPE PROFILES TO USER FOR SELECTION OF CLOSEST STEREOTYPES
340
GENERATE VIEWING HISTORY FOR USER COMPRISED OF PROGRAMS FROM SELECTED STEREOTYPE PROFILES
350
APPLY GENERATED VIEWING HISTORY TO PROGRAM RECOMMENDER TO OBTAIN PROGRAM RECOMMENDATIONS
360
370
END

FIG. 3

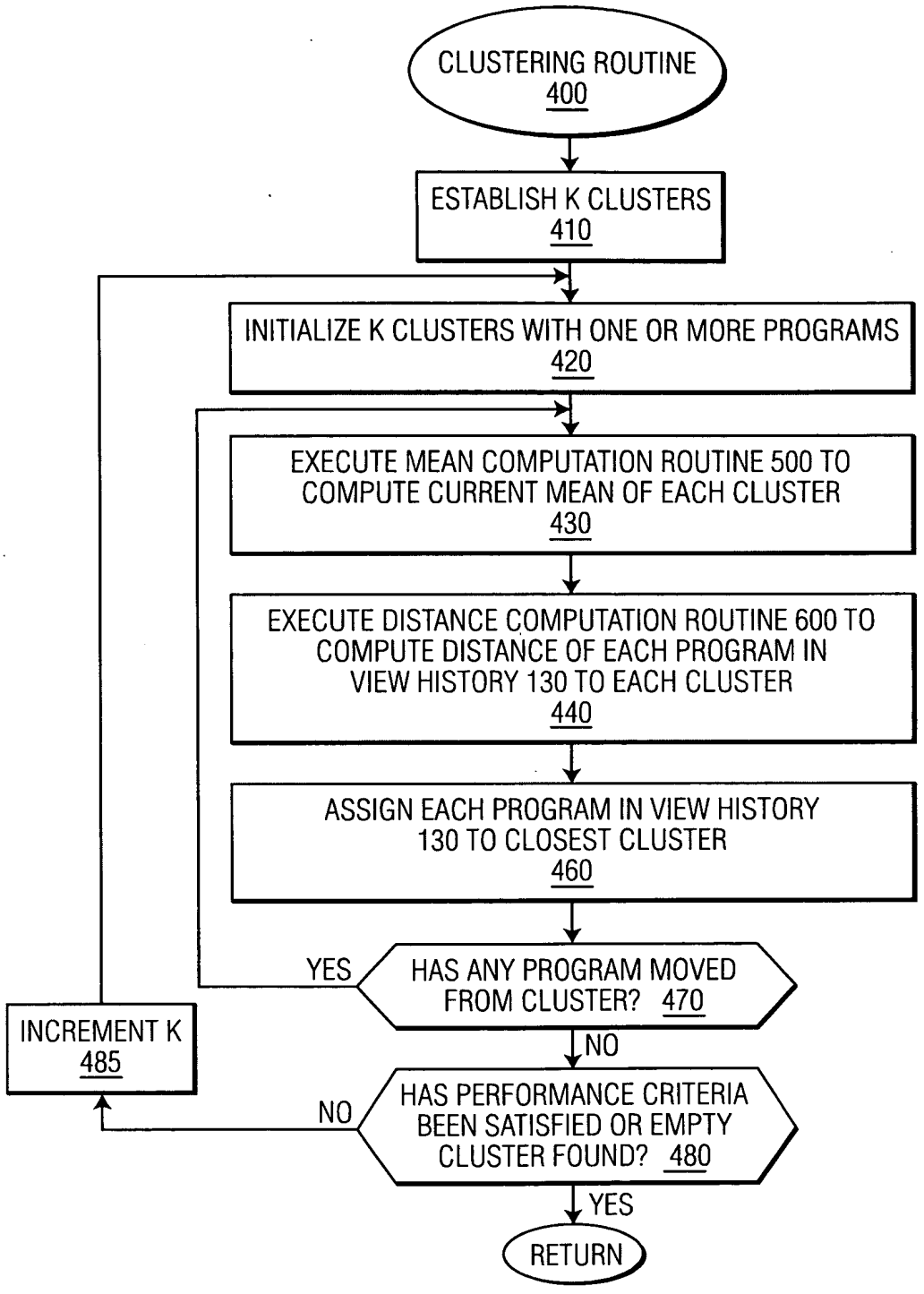
CLUSTERING ROUTINE
400
ESTABLISH K CLUSTERS
410
INITIALIZE K CLUSTERS WITH ONE OR MORE PROGRAMS
420
EXECUTE MEAN COMPUTATION ROUTINE 500 TO COMPUTE CURRENT MEAN OF EACH CLUSTER
430
EXECUTE DISTANCE COMPUTATION ROUTINE 600 TO COMPUTE DISTANCE OF EACH PROGRAM IN VIEW HISTORY 130 TO EACH CLUSTER
440
ASSIGN EACH PROGRAM IN VIEW HISTORY 130 TO CLOSEST CLUSTER
460
YES
HAS ANY PROGRAM MOVED FROM CLUSTER? 470
NO
INCREMENT K
485
NO
HAS PERFORMANCE CRITERIA BEEN SATISFIED OR EMPTY CLUSTER FOUND? 480
YES
RETURN

FIG. 4

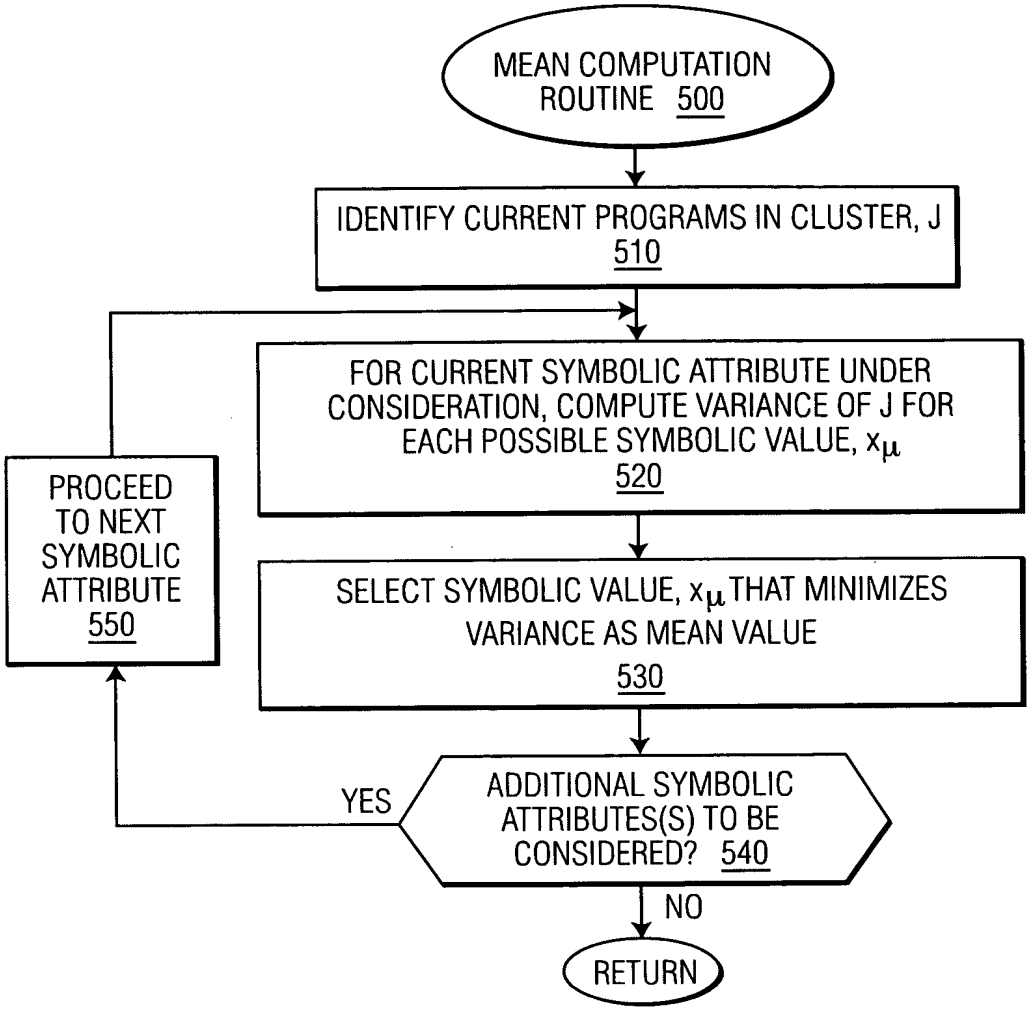
MEAN COMPUTATION ROUTINE 500
IDENTIFY CURRENT PROGRAMS IN CLUSTER, J 510
FOR CURRENT SYMBOLIC ATTRIBUTE UNDER CONSIDERATION, COMPUTE VARIANCE OF J FOR EACH POSSIBLE SYMBOLIC VALUE, x_μ 520
SELECT SYMBOLIC VALUE, x_μ THAT MINIMIZES VARIANCE AS MEAN VALUE 530
ADDITIONAL SYMBOLIC ATTRIBUTES(S) TO BE CONSIDERED? 540
YES
NO
PROCEED TO NEXT SYMBOLIC ATTRIBUTE 550
RETURN

FIG. 5

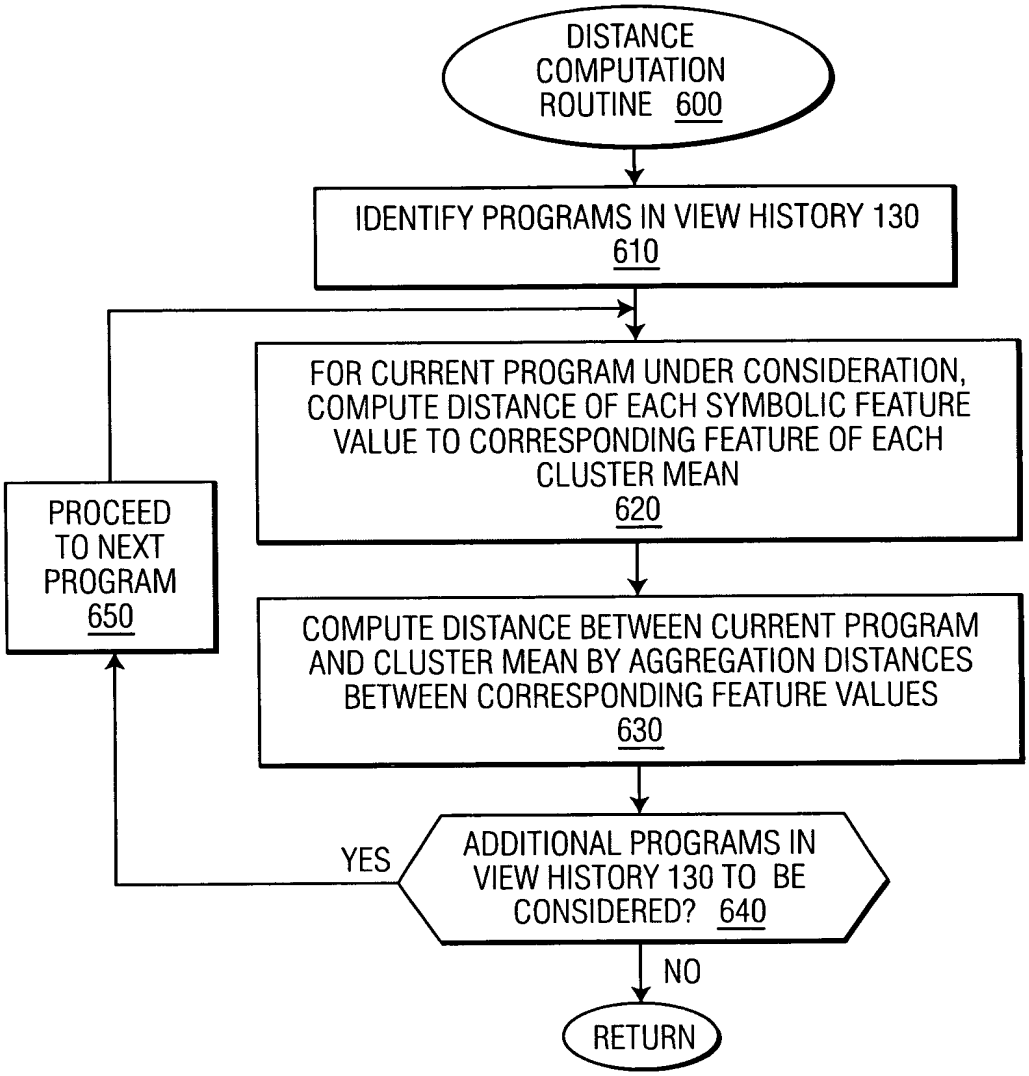
DISTANCE COMPUTATION ROUTINE 600
IDENTIFY PROGRAMS IN VIEW HISTORY 130 610
FOR CURRENT PROGRAM UNDER CONSIDERATION, COMPUTE DISTANCE OF EACH SYMBOLIC FEATURE VALUE TO CORRESPONDING FEATURE OF EACH CLUSTER MEAN 620
COMPUTE DISTANCE BETWEEN CURRENT PROGRAM AND CLUSTER MEAN BY AGGREGATION DISTANCES BETWEEN CORRESPONDING FEATURE VALUES 630
ADDITIONAL PROGRAMS IN VIEW HISTORY 130 TO BE CONSIDERED? 640
YES
PROCEED TO NEXT PROGRAM 650
NO
RETURN

FIG. 6

CHANNEL FEATURE VALUE OCCURRENCE TABLE – – 700

	CLASSES	
FEATURE VALUES	WATCHED	NOT WATCHED
XXX	353	0
ZZZ	1	18
YYY	145	5

FIG. 7A

FEATURE VALUE PAIR DISTANCE TABLE – – 750

	XXX	ZZZ	YYY
XXX	0	1.895	0.066
ZZZ	1.895	0	1.828
YYY	0.066	1.828	0

FIG. 7B

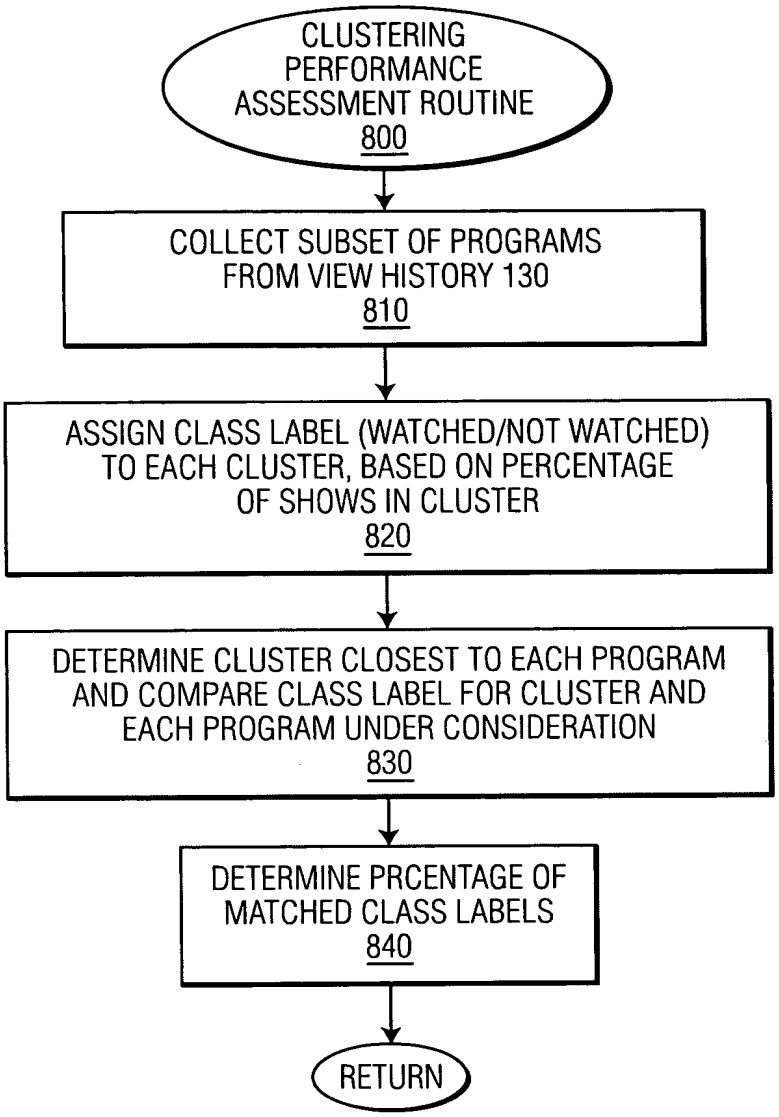
CLUSTERING PERFORMANCE ASSESSMENT ROUTINE
800
COLLECT SUBSET OF PROGRAMS FROM VIEW HISTORY 130
810
ASSIGN CLASS LABEL (WATCHED/NOT WATCHED) TO EACH CLUSTER, BASED ON PERCENTAGE OF SHOWS IN CLUSTER
820
DETERMINE CLUSTER CLOSEST TO EACH PROGRAM AND COMPARE CLASS LABEL FOR CLUSTER AND EACH PROGRAM UNDER CONSIDERATION
830
DETERMINE PRCENTAGE OF MATCHED CLASS LABELS
840
RETURN

FIG. 8